

The Effects of Wound Protector to Decrease the Incisional Surgical Site Infection in Open Abdominal Surgery, Double-Blind Prospective Randomized Controlled Trial

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Abstract

Background: Surgical site infection (SSI) is the most common cause of postoperative morbidity after laparotomy. Many independent factors show to increase risk of SSI. Prevention of SSI is very important especially intraoperative period.

Methods: Patients undergoing a standard midline laparotomy were prospectively randomized to use or not use a wound protector between September 2016 and January 2018. The 128 patients were eligible for the study. Preoperative and perioperative data, those can be risk factors for SSI, incidence of the SSI in each group were collected for analysis.

Results: Wound protector was used in 64 patients (WP group) and not used in 64 patients (Non-WP group). All demographic data and surgical variability of the 2 groups are no significantly difference. A patient in non-WP group dead from non-SSI related condition. Three patients (1 patient from non-WP and 2 patients from WP group) undergone re-operation before 30 days without any wound complication. Incisional surgical site infection had significantly higher incidence in Non-WP group than WP group (35.5% vs 12.9%, P-value 0.006). Multivariate analysis revealed that placement of a wound protector could decrease the incidence of I-SSI (odds ratios [OR] 0.269, 95% confidence interval [CI] 0.109-0.667). Many specific conditions that wound protector could prevent the I-SSI were found.

Conclusion: Using wound protector placement is effective for decreasing the incidence of incisional surgical site infection in the major laparotomy operation.

Key word: intra-abdominal operation, laparotomy, surgical site infection, wound protector, wound retractor